

## CLAIMS

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- 2 **1.** A computer-implemented architecture comprising:
- 3 one or more first objects that support only static properties; and
- 4 one or more second objects associated with the one or more first objects
- 5 and configured to call the one or more first objects to effect one or more property
- 6 value changes on the one or more first objects in a manner that makes the one or
- 7 more first objects appear as if they support dynamic properties.
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- 9 **2.** The computer-implemented architecture of claim 1, wherein the one or more
- 10 second objects are configured to maintain property data that is used to call the one
- 11 or more first objects.
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- 13 **3.** The computer-implemented architecture of claim 2, wherein the property
- 14 data comprises at least one property value change that is to be made.
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- 16 **4.** The computer-implemented architecture of claim 2, wherein the property
- 17 data comprises a time at which a property value change is to be made.
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- 19 **5.** The computer-implemented architecture of claim 2, wherein the property
- 20 data comprises how a property value change is to be made.
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6. The computer-implemented architecture of claim 2, wherein the property data comprises one or more of the following: at least one property value change that is to be made, a time at which a property value change is to be made, and how a property value change is to be made.

7. The computer-implemented architecture of claim 2, wherein the property data comprises at least one property value change that is to be made, a time at which a property value change is to be made, and how a property value change is to be made.

8. The computer-implemented architecture of claim 1 further comprising one or more data structures associated with the one or more second objects, individual data structures containing data that is to be used by the one or more second objects to effect a property value change.

9. The computer-implemented architecture of claim 8, wherein the one or more data structures comprise an array of one or more sets of data structures, each set of data structures being associated with a property that is to be changed and containing property data that is to be used to change property values for a property.

10. The computer-implemented architecture of claim 9, wherein the property data comprises at least one property value change that is to be made.

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- 11.** The computer-implemented architecture of claim 9, wherein the property data comprises a time at which a property value change is to be made.
- 12.** The computer-implemented architecture of claim 9, wherein the property data comprises how a property value change is to be made.
- 13.** The computer-implemented architecture of claim 9, wherein the property data comprises at least one property value change that is to be made, a time at which a property value change is to be made, and how a property value change is to be made.
- 14.** Software code embodied on a computer-readable medium which, when executed by a computer, implements the system of claim 1.
- 15.** A multi-media editing application comprising the computer-implemented system of claim 1.
- 16.** A multi-media project editing architecture comprising:  
one or more first objects that support only static properties, the one or more first objects being configured to implement a transform associated with processing of a multi-media editing project;  
one or more second objects associated with the one or more first objects and configured to call the one or more first objects to effect one or more property value changes on the one or more first objects in a manner that makes the one or more first objects appear as if they support dynamic properties; and

one or more data structures associated with the one or more second objects, individual data structures containing property data that is to be used by the one or more second objects to effect a property value change.

17. The multi-media project editing architecture of claim 16, wherein the one or more data structures comprise an array of one or more sets of data structures, each set of data structures being associated with a property whose values are to be changed and containing property data that is to be used to change property values for a property.

18. The multi-media project editing architecture of claim 17, wherein the property data comprises at least one value to which a property is to be changed.

19. The multi-media project editing architecture of claim 17, wherein the property data comprises a time at which at least one property value is to be changed.

20. The multi-media project editing architecture of claim 17, wherein the property data comprises how at least one property value is to be changed.

21. The multi-media project editing architecture of claim 17, wherein the property data comprises: at least one value to which a property is to be changed, a time at which at least one property value is to be changed, and how at least one property value is to be changed.

1 22. Software code embodied on a computer-readable medium which, when  
2 executed by a computer, implements the system of claim 16.

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4 23. A multi-media editing application comprising the computer-implemented  
5 system of claim 16.

6  
7 24. A multi-media project editing architecture comprising:

8 a software-implemented matrix switch having multiple input pins and  
9 multiple output pins, the multiple input pins being routable to the multiple output  
10 pins, the switch being configured to provide a data stream that represents a multi-  
11 media project;

12 a data structure associated with the matrix switch and configured for use in  
13 programming the matrix switch to provide a routing scheme for routing input pins  
14 to output pins;

15 one or more first objects associated with the matrix switch, the one or more  
16 first objects supporting only static properties associated with rendering of a multi-  
17 media project;

18 one or more second objects associated with the one or more first objects  
19 and configured to call the one or more first objects to effect one or more property  
20 value changes on the one or more first objects in a manner that makes the one or  
21 more first objects appear as if they support dynamic properties.

1 **25.** The multi-media project editing architecture of claim 24 further comprising  
2 one or more data structures associated with the one or more second objects,  
3 individual data structures containing data that is to be used by the one or more  
4 second objects to effect a property value change.

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6 **26.** The multi-media project editing architecture of claim 25, wherein the one  
7 or more data structures comprise an array of one or more sets of data structures,  
8 each set of data structures being associated with a property whose values is to be  
9 changed and containing property data that is to be used to change property values.

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11 **27.** The multi-media project editing architecture of claim 26, wherein the  
12 property data comprises a property value of a property that is to be changed.

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14 **28.** The multi-media project editing architecture of claim 26, wherein the  
15 property data comprises a time at which a property value is to be changed.

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17 **29.** The multi-media project editing architecture of claim 26, wherein the  
18 property data comprises how a property value is to be changed.

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20 **30.** The multi-media project editing architecture of claim 26, wherein the  
21 property data comprises a property value of a property that is to be changed, a time  
22 at which a property value is to be changed, and how a property value is to be  
23 changed.

1 **31.** A property value-changing method comprising:  
2 providing one or more objects that support only static properties;  
3 providing one or more programmable objects configured to effect property  
4 value changes on the objects that support only static properties; and  
5 effecting at least one property value change on the one or more objects that  
6 support only static properties using the one or more programmable objects.

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8 **32.** The method of claim 31 further comprising programming the one or more  
9 programmable objects with property data that is to be used by the one or more  
10 programmable objects to effect said at least one property value change.

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12 **33.** The method of claim 32, wherein the property data comprises one or more  
13 property values that are to be changed.

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15 **34.** The method of claim 32, wherein the property data comprises a time at  
16 which a property value is to be changed.

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18 **35.** The method of claim 32, wherein the property data comprises how a  
19 property value is to be changed.

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21 **36.** The method of claim 32, wherein the property data comprises one or more  
22 property values that are to be changed, a time at which a property value is to be  
23 changed, and how a property value is to be changed.





responsive to said calling, using the property data to effect a property value change on the one or more objects that do not support dynamic properties.

42. The method of claim 41 further comprising calling the programmable object with a time value, the programmable object using the time value to ascertain when to call the one or more objects.

43. The method of claim 41, wherein said programming comprises arranging the property data in a data structure array comprising one or more sets of data structures, each set of data structures being associated with a property whose value is to be changed.

44. One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, implement the method of claim 41.

45. One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, cause the computer to:

provide one or more objects that support only static properties;

provide one or more programmable objects configured to effect property value changes on the objects that support only static properties;

program the one or more programmable objects with property data that is to be used by the one or more programmable objects to effect said at least one property value change, the property data comprising: property value changes that

are to be made, time(s) at which property value changes are to be made, and how the property value changes are to be made; and

effect at least one property value change on the one or more objects that support only static properties by using the one or more programmable objects to call the one or more objects that support only static properties.

**46.** A property value-changing method comprising:

programming a programmable object with property data that defines when certain property value changes are to be made and what those property value changes are, the property value changes being associated with rendering of a multi-media editing project;

calling, with the programmable object, one or more objects that do not support dynamic properties; and

responsive to said calling, using the property data to effect a property value change on the one or more objects.

**47.** The method of claim 46 further comprising calling the programmable object with a current time, the programmable object using the current time to ascertain when to call the one or more objects.

**48.** The method of claim 46, wherein said programming comprises arranging the property data in a data structure array comprising one or more sets of data structures, each set of data structures being associated with a property whose value is to be changed.





1 **56.** The multi-media system of claim 55 further comprising one or more data  
2 structures associated with the programmable object(s), individual data structures  
3 containing data that is to be used by the programmable object(s) to effect a  
4 property value change.

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6 **57.** The multi-media system of claim 56, wherein the one or more data  
7 structures comprise an array of one or more sets of data structures, each set of data  
8 structures being associated with a property value that is to be changed and  
9 containing property data that is to be used to change that property value.

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11 **58.** The multi-media system of claim 56, wherein the one or more data  
12 structures comprise an array of one or more sets of data structures, each set of data  
13 structures being associated with a property whose value is to be changed and  
14 containing property data that is to be used to change that property value, the  
15 property data comprising: a property value that is to be changed, a time at which  
16 the property value is to be changed, and a manner in which the property value is to  
17 be changed.